



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/677,842

10/02/2003

Robert Elliott Robotham

1400.1375460

9518

25697 7590 04/12/2007  
ROSS D. SNYDER & ASSOCIATES, INC.  
PO BOX 164075  
AUSTIN, TX 78716-4075

EXAMINER

FAROUL, FARAH

ART UNIT

PAPER NUMBER

2616

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

04/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/677,842

Applicant(s)

ROBOTHAM, ROBERT ELLIOTT

Examiner

Farah Faroul

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The following Office Action is based on Application No. 10/677,842 filed on October 2, 2003 having claims 1-13 and Figures 1-4.

#### ***Claim Objections***

2. Claims 6-13 are objected to because of the following informalities:

In claims 6-13, it is suggested that applicant delete the phrase "configured to" to make the claims positive.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angle et al. (US 6,771,596 B1) in view of Hughes et al. (US 6,747,971 B1).

For claims 1, 6 and 10, Angle discloses sending, to the switch fabric by a first line card of the line cards, a first request for transmitting a first unit of traffic of a first priority to the switch fabric, the first request indicating a first output port for which the first unit of traffic is destined, (Figure 1, element 105, column 4, lines 20-51, column 6, line 53 to column 7, line 6 wherein requests are transmitted from the input port of the line card indicating the destined output port) and

Making a second request for a second unit of traffic having a second priority lower than the first priority and being destined to the first output port, for scheduling transmission of the first unit of traffic to the switch fabric (column 7, line 37-67 wherein requests are made in decreasing order of priority to the switch fabric)

For claims 1, 6 and 10, Angle discloses the entire claimed invention except for using, by the first line card, a first grant received from the switch fabric permitting transmission of the first unit of traffic to the switch fabric.

Hughes, from the same or similar field of endeavor, discloses a first grant phase allowing data transfer in response to a request to the switch fabric (column 4, lines 53-67, column 6, lines 27-40).

Thus, it would have been obvious to someone of ordinary skill in the art to combine the backpressure mechanism of Angle with the scheduling method of Hughes at the time of the invention. The scheduling method of Hughes can be implemented into the communication network of Angle by adding a grant phase to each transmission

request. The motivation to combine the scheduling method of Hughes with the communication network of Angle is that it reduces latency in end-to-end communication.

For claim 2, Hughes discloses using a second grant issued in response to the first request for scheduling transmission of the second unit of the traffic to the switch fabric (column 5, lines 6-17 wherein the scheduling method comprises a second grant phase in response to a request for second data transfer).

For claim 3, Angle discloses the method of claim 1 wherein the first priority and the second priority are selected from a plurality of priorities corresponding to a respective plurality of service classes (column 7, lines 37-50 wherein the order of priority corresponds to a class of service in the scheduling cycle).

For claim 4, Hughes discloses the first line card sending the first request after the second request (column 4, lines 21-46 wherein the input control ports of the line card send a first request after a second request).

For claim 5, Angle discloses the first line card sends a first set of requests of a highest priority of a plurality of priorities, with the first set of requests corresponding to a first quantity of the traffic in an amount of guaranteed traffic flow serviced by the first line card, and sends a second set of requests of a lower priority of the priorities for a second quantity of the traffic (column 16, lines 4-30 wherein a plurality of requests associated with a plurality of priorities are received and the set of requests with the highest priority class of service level is granted).

For claims 7 and 11, Hughes discloses the first line card utilizing the first grant for transmitting the first unit of the traffic so as to conform to a latency criterion pertaining to

a first data stream comprising the first unit of the traffic (column 15, lines 27-38 wherein grants corresponding to specific request are mapped into grant frames for data transmission).

For claims 8 and 12, Hughes discloses the first line card utilizing a second grant of the grants corresponding to the second request for transmitting a second unit of traffic corresponding to the first request to the switch fabric column 15, lines 27-38 wherein grants corresponding to specific request are mapped into grant frames for data transmission).

For claims 9 and 13, Hughes discloses the first line card issuing the first request prior to the second request (column 12, line 66 to column 13, line 24 wherein primary requests are processed before secondary requests).

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zecharia et al. (US 2004/0062261) and Dove et al. (US 2004/0246977 A1) are cited to show systems pertinent to applicant's invention. Zecharia discloses a multi-service segmentation and reassembly integrated circuit disposed on a line card in a router or switch for traffic scheduling. Dove discloses a point to point system for a connecting a line card to a switch card using transmission rate measurement.

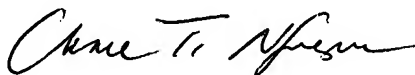
Art Unit: 2616

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farah Faroul whose telephone number is 571-270-1421. The examiner can normally be reached on Monday - Friday 6:30 AM - 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

F. Faroul



CHAU NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600